DIGITAL/ANALOG MEGOHMMETERS

Models 1030/1035/1039/1040/1045

- Test voltage combinations 50V, 100V, 250V, 500V and 1000V
- Insulation measurements to 20,000MΩ
- Automatic test inhibit when >25V present and voltage safety checker
- Automatic discharge for operator safety
- Multi-line 4000-count backlit digital display with analog bargraph
- Resistance, 200mA continuity and alarm functions
- Timer function for easy DAR and PI measurements
- Custom telecom model with cable length, capacitance resistance and current measurements
- Over-molded slip-proof holster for rugged field use
- Designed for use in IEC 1010, 600V, Cat. III environments

AEMC® INSTRUMENTS

Test Equipment Depot
99 Washington Street
Melrose, MA 02176-6024

www.testequipmentdepot.com
800-517-8431
781-665-0780 FAX

Transformer testing using Model 1045 with remote probe and target light (backlight on)

Product Construction

The AEMC® Digital/Analog Megohmmeters are the latest design in multiple voltage insulation, resistance and continuity meters.

They incorporate the latest measurement technology and are specifically designed to the most recent international insulation and continuity testing standards, as well as IEC 1010, safety standards.

Their rugged construction is unique in Megohmmeters. A slip-proof and shock-proof holster is directly over-molded on the high impact polycarbonate case. The overall ergonomic shape fits naturally into the hand and the two back case ridges facilitate a firm grip on the meter. The case is sealed against water and dust with an IP45 (Index of Protection).

An exceptionally large Digital/Analog multi-function display provides clear and easy readings enhanced by a bright blue electroluminescent backlight. The large 4000-count main digital display provides clear measurement readings, while the long and fast responding arced analog bargraph provides easy readings for capacitive charge and absorption trend characteristics.

Digital and analog features are enhanced by a third digital display, which indicates alarm set point or elapsed test time.

Measurement Functions

Numerous safety and display features are incorporated. All models measure insulation resistance to either 2000MΩ or 20,000MΩ with 1mA of test current required by IEC 61557 at the rated test voltage. Each model incorporates a 600V voltmeter, which automatically detects and accurately displays AC/DC voltages in the test circuit in each of the insulation test voltage ranges. Above 25V, it also provides an audible and visual signal and inhibits further tests, thus protecting the user and the meter. After an insulation resistance measurement, the megohmmeter will automatically discharge the circuit and display the remaining capacitive voltage at the test sample.

20Ω continuity tests are taken at 200mA in compliance with the IEC 61557 standard and offers high accuracy with 0.01Ω resolution.

Time sensitive measurements such as DAR (Dielectric Absorption Ratio) and PI (Polarization Index) are greatly facilitated with the built-in timer function, which clearly displays the elapsed test time. When the timer function is selected, the user does not need to keep pressing the test button, and may operate hands free for the duration of the test or until the test button is pressed again. The megohmmeter will beep automatically at 30sec, 60sec and 10 minutes, to remind the user to record the measurements.

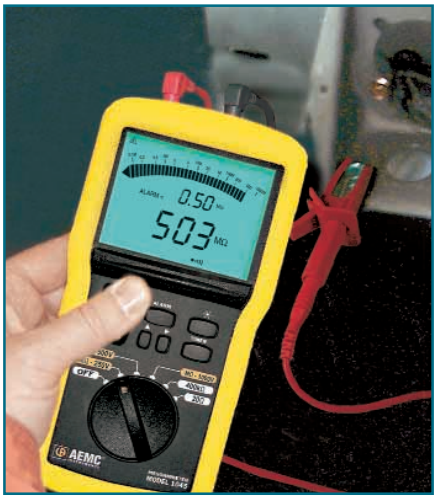
The Model 1039, ideal for telecom applications, also measures resistance, cable length to 80.0 kilometers and capacitance to 4000nF. A 400mA range on Model 1035 is available for direct current measurement or it can be used with an AC current probe with a mA output.

Relative value monitor allows for deviation measurement from a known test resistance.

Continuity and resistance measurements do not require the use of the test button.

An optional Remote Test Probe (with a target light) is available and permits operation from the probe.

Note: Features and descriptions not common to all models – please refer to "Overview of Functions" for model descriptions



Motor test using standard leads (backlight on)

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FEATURES

- Extra large multi-line 4000-count backlit digital display with analog bargraph
- Simple, intuitive operation with straightforward buttons and Digital/Analog LCD display
- Test voltage combinations from 50V, 100V, 250V, 500V and 1000V, and insulation measurements to 2000MΩ or 20,000MΩ (dependent on model)
- Automatic test inhibit in the presence of a live circuit for enhanced user safety
- Automatic discharge with display of remaining capacitive charge voltage at the test leads
- Built-in auto-ranging 600VAC/DC default voltage tester and warnings, with test inhibitor for enhanced user safety
- Hands-free resistance range with low voltage and low current for sensitive sample testing
- Fast responding and standard compliant continuity range with 200mA test current, lead resistance compensation (auto zero), and 10mΩ resolution
- Alarm function for quick and repetitive tests
- Timer function for easy Dielectric Absorption Ratio (DAR) and Polarization Index (PI) measurements
- Relative function for measuring deviation from nominal value
- Battery life (%) indicator at power up – using digital display and analog bargraph
- Designed to meet most rigorous field demands through unique construction and measurement features
- Over-molded slip-proof hard case with custom ergonomic back design to improve grip and handling
- Optional test probe for remote test activation
- Complies with international insulation test standards (IEC 61557) and safety standards (IEC 1010)
- Water and dust proofed to IP45
- UL agency approvals pending
- CE Mark

Note: Some features are model dependent

APPLICATIONS

- Motor Insulation Resistance Measurements
- Continuity Checks and Low Resistance Measurement
- Test/Industrial Commercial Wiring and Motor Control Centers
- Test Motors (AC and DC) and Transformers
- Dielectric Absorption Ratio and Polarization Index Measurements
- Cable Testing (including telecom)

Easy to read digital/analog display (backlight on)

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KEY COMPONENTS

STRAIGHTFORWARD LAYOUT & INTUITIVE OPERATION

For motors, cables, switchgear and general applications

Alarm & Time Display

FUS displayed if fuse open

Function Indicators and Warnings

Large Ergonomically Shaped Test Button

Cursor Keys to Adjust Alarm Settings

Analog Bargraph

Dual Digital LCD Displays

Battery Charge (%) Displayed During Power Up

Alarm On/Off Key

Back Light Key

Timer Key

Large Range Selector Switch

⏲	Timer On
ALARM	Alarm On
>	High Limit Trigger
<	Low Limit Trigger
⚠	Test Voltage On
–	Negative Value
⚠	Refer to User Manual
FUS	Fuse Open
>25V	Measured Voltage > 25V
→0←	Lead, Resistance Zeroing
•)))	Active Buzzer
P	Permanent Run - Auto Off Disabled
−+	Low Battery

Shown at actual size (backlight on)

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OVERVIEW

OF FUNCTIONS MODELS 1030, 1040, 1045

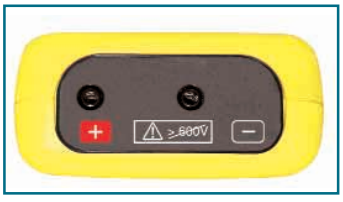
GENERAL PURPOSE			
FUNCTION	Model 1030	Model 1040	Model 1045
250V (2,000MΩ)	✓		✓
500V (2,000MΩ)	✓	✓	✓
1000V (2,000MΩ)		✓	✓
Voltage Tester/Safety Check (600VAC/DC)	✓	✓	✓
Guard Terminal			
Continuity (20Ω) @200mA	✓	✓	✓
Resistance (400kΩ)		✓	✓
Lead Compensation		✓	✓
Backlight		✓	✓
Alarm (setpoint, <, >)		✓	✓
Remote Test Probe		✓	✓
Timer (0–15 minutes)			✓
Timer Beeper (@ 30sec, 60sec & 10min)			✓
Digital Dual Display	✓	✓	✓
Analog Bargraph	✓	✓	✓
Auto-Off	✓	✓	✓
Continuity Buzzer	✓	✓	✓
Continuity Buzzer Disable	✓	✓	✓
Voltage Detection (>25V)	✓	✓	✓
Safety Test Inhibitor	✓	✓	✓
Automatic Discharge	✓	✓	✓
Fuse Protection	✓	✓	✓
Auto Fuse Check	✓	✓	✓
Low Battery	✓	✓	✓
Battery Capacity (%) Indication	✓	✓	✓
Auto-Off Disable		✓	✓
CE Mark	✓	✓	✓
Agency Approval	PENDING	PENDING	PENDING
Optional Remote Test Probe		✓	✓
Optional Hands Free Carrying Case	✓	✓	✓
Optional Waterproof Field Case	✓	✓	✓

The Models 1030, 1040 and 1045 are general purpose insulation testers designed for both field and shop use. They are ideal for measuring the insulation qualities of motors, transformers and power cables. Test voltages of 250V, 500V or 1000V are selectable depending on model. Measurement of AC and DC voltage, resistance and continuity can also be performed.

APPLICATIONS

- Cable Insulation Testing
- Motor Winding Testing
- Continuity Testing
- AC and DC Voltage Measurements
- Resistance Measurements

INPUT CONNECTIONS



Model 1030

Models 1040 & 1045

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KEY COMPONENTS

STRAIGHTFORWARD LAYOUT & INTUITIVE OPERATION

For telecom and low voltage, low current applications

Alarm

FUS displayed if fuse open

Function Indicators and Warnings

Large Ergonomically Shaped Test Button

Cursor Keys to Adjust Alarm Settings

Analog Bargraph

Capacitance and Cable Length Indicated (Model 1039 Only)

Dual Digital LCD Displays

Battery Charge (%) Displayed During Power Up

Alarm On/Off Key

Back Light Key

Deviation Key

Large Range Selector Switch

ALARM	Alarm On
>	High Limit Trigger
<	Low Limit Trigger
⚠	Test Voltage On
–	Negative Value
⚠	Refer to User Manual
FUS	Fuse Open
>25V	Measured Voltage > 25V
→Ω0←	Lead, Resistance Zeroing
●)))	Active Buzzer
Ⓟ	Permanent Run - Auto Off Disabled
	Low Battery
nF	nanoFarad
km	Kilometers
ΔREL	Relative Position

Shown at actual size (backlight on)

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OVERVIEW
OF FUNCTIONS MODELS 1035 AND 1039

LOW VOLTAGE INSULATION TESTING		
FUNCTION	**Model 1035**	**Model 1039**
50V (400MΩ)		✓
50V (2,000MΩ)	✓	
100V (400MΩ)		✓
100V (2000MΩ)	✓	
250V (20,000MΩ)	✓	
500V (20,000MΩ)	✓	
Voltage Tester/Safety Check (600VAC/DC)	✓	✓
Guard Terminal	✓	
Δ REL	✓	✓
Continuity (20Ω) @200mA	✓	
Resistance (400kΩ)	✓	
Resistance (40kΩ)		✓
Backlight	✓	✓
AC Voltage (0-400VAC)		✓
Capacitance (to 400nF)		✓
Cable Length (80Km)		✓
AC Current Measurement (0-400mAAC Direct)	✓	
Alarm (setpoint, <, >)	✓	✓
Remote Test Probe	✓	✓
Digital Dual Display	✓	✓
Analog Bargraph	✓	✓
Auto-Off	✓	✓
Voltage Detection (>25V)	✓	✓
Safety Test Inhibitor	✓	✓
Automatic Discharge	✓	✓
Fuse Protection	✓	✓
Auto Fuse Check	✓	✓
Low Battery	✓	✓
Battery Capacity (%) Indication	✓	✓
Auto-Off Disable	✓	✓
IEC 1010, 600V Cat. III	✓	✓
CE Mark	✓	✓
Agency Approval	PENDING	PENDING
Optional Remote Test Probe	✓	✓
Optional Hands Free Carrying Case	✓	✓
Optional Waterproof Field Case	✓	✓
Optional AC Current Probe		✓

The Models 1035 and 1039 are low voltage insulation testers designed for both field and shop use with communication equipment. They are ideal for measuring the insulation qualities of phone cables, data cables and power cables. Test voltages of 50V, 100V, 250V or 500V are selectable depending on model. Measurement of AC and DC voltage, resistance and continuity, cable capacitance, cable length and AC current can also be performed depending on model selected.

APPLICATIONS

- Telecom Insulation Resistance at Low Voltage
- Line to Line Imbalance
- Line to Line Capacitance
- Off Hook Detection
- Center Station Voltage Testing
- Cable Capacitance
- Cable Length Measurement Indication
- Detect Broken Cable

INPUT CONNECTIONS

Model 1035

Models 1039

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SPECIFICATIONS

General Purpose

	Model 1030	Model 1040	Model 1045
INSULATION TESTS			
Test Voltage 50V **Range** 100V 250V 500V 1000V	— — 50k to 2000MΩ 100k to 2000MΩ —	— — — 100k to 2000MΩ 200k to 2000MΩ	— — 50k to 2000MΩ 100k to 2000MΩ 200k to 2000MΩ
Short Circuit Current	≤ 3mA	≤ 3mA	≤ 3mA
Accuracy	3% Reading ± 5ct (< 40MΩ) 3% Reading ± 2ct (> 40MΩ)	3% Reading ± 5ct (< 40MΩ) 3% Reading ± 2ct (> 40MΩ)	3% Reading ± 5ct (< 40MΩ) 3% Reading ± 2ct (> 40MΩ)
Automatic Discharge	Yes w/ voltage display	Yes w/ voltage display	Yes w/ voltage display
Voltage Tester/Safety Check	0 to 600VAC/DC	0 to 600VAC/DC	0 to 600VAC/DC
Voltage Warning Indicator	> 25V	> 25V	> 25V
Test Inhibition	Yes > 25V	Yes > 25 V	Yes > 25V
Guard Terminal	—	—	—
CONTINUITY			
Range	0.00 to 20.00Ω	0.00 to 20.00Ω	0.00 to 20.00Ω
Short Circuit Current	≥ 200mA	≥ 200mA	≥ 200mA
Accuracy	3% Reading ± 1ct	3% Reading ± 1ct	3% Reading ± 1ct
RESISTANCE			
Range	—	0.0 to 400kΩ	0.0 to 400kΩ
Open Voltage	—	7 – 9V	7 – 9V
Accuracy	—	3% Reading ± 1ct	3% Reading ± 1ct
VOLTAGE			
Voltage Range	—	—	—
Accuracy	—	—	—
CURRENT/CAPACITANCE/CABLE LENGTH			
AC Current	—	—	—
Capacitance	—	—	—
Cable Length	—	—	—
DISPLAY			
Display Size	2 x 3" (54.3 x 73mm)	2 x 3" (54.3 x 73mm)	2 x 3" (54.3 x 73mm)
Digital Display	4000 count	4000 count	4000 count
Analog Bargraph	34 segments	34 segments	34 segments
Backlight	—	Blue Electroluminescent	Blue Electroluminescent
GENERAL SPECIFICATIONS			
Power Supply	6 x 1.5V AA (NEDA 15A) Capable of performing > 3500 5 sec tests	6 x 1.5V AA (NEDA 15A) Capable of performing > 3500 5 sec tests	6 x 1.5V AA (NEDA 15A) Capable of performing > 3500 5 sec tests
Dimensions (LxHxW)	8.31 x 4.26 x 2.36" (211 x 108 x 60mm)	8.31 x 4.26 x 2.36" (211 x 108 x 60mm)	8.31 x 4.26 x 2.36" (211 x 108 x 60mm)
Weight	29 oz (830g)	29 oz (830g)	29 oz (830g)
Protection Index (IP)	IP44	IP44	IP44
Patent Pending	Yes	Yes	Yes
SAFETY			
IEC 1010-1	Designed for use in 600V Cat. III environments		
CE Mark	Yes	Yes	Yes

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SPECIFICATIONS

High Sensitivity/Telecom

	Model 1035	Model 1039
INSULATION TESTS		
Test Voltage / Range 50V	10k to 2GΩ	10k to 400MΩ
100V	20k to 2GΩ	20k to 400MΩ
250V	50k to 20GΩ	—
500V	100k to 20GΩ	—
1000V	—	—
Short Circuit Current	≤ 3mA	≤ 3mA
Accuracy	3% Reading ± 5ct (< 40MΩ) 3% Reading ± 2ct (> 40MΩ)	3% Reading ± 5ct (< 40MΩ) 3% Reading ± 2ct (> 40MΩ)
Automatic Discharge	Yes w/ voltage display	Yes w/ voltage display
Voltage Tester/Safety Check	0 to 600VAC/DC	0 to 600VAC/DC
Voltage Warning Indicator	> 25V	> 25V
Test Inhibition	Yes > 25V	Yes > 25V
Guard Terminal	Yes	—
CONTINUITY		
Range	—	—
Short Circuit Current	—	—
Accuracy	—	—
RESISTANCE		
Range	0.0 to 400kΩ	0.0 to 40.0kΩ
Open Voltage	7 to 9V	7 to 9V
Accuracy	3% Reading ± 1ct	3% Reading ± 1ct
VOLTAGE		
Voltage Range	—	0 to 600VAC/DC
Accuracy	—	3% Reading ± 1ct
CURRENT/CAPACITANCE/CABLE LENGTH		
AC Current	—	0.00 to 400mA (240A with probe option)
Capacitance	—	0.0 to 4000nF
Cable Length	—	0.000 to 80.0Km
DISPLAY		
Display Size	2 x 3" (54.3 x 73mm)	2 x 3" (54.3 x 73mm)
Digital Display	4000 count	4000 count
Analog Bargraph	34 segments	34 segments
Backlight	Blue Electroluminescent	Blue Electroluminescent
GENERAL SPECIFICATIONS		
Power Supply	6 x 1.5V AA (NEDA 15A) Capable of performing > 3500 5 sec tests	6 x 1.5V AA (NEDA 15A) Capable of performing > 3500 5 sec tests
Dimensions (LxHxW)	8.31 x 4.26 x 2.36" (211 x 108 x 60mm)	8.31 x 4.26 x 2.36" (211 x 108 x 60mm)
Weight	29 oz (830g)	29 oz (830g)
Protection Index (IP)	IP44	IP44
Patent Pending	Yes	Yes
SAFETY		
IEC 1010-1	600V, Cat. III	600V, Cat. III
CE Mark	Yes	Yes

Testing using Model 1039

High Sensitivity Model 1035 and Telecom Model 1039 (Bargraph off)

General Purpose Models 1030/1040/1045

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ACCESSORIES

Accessories include an optional switched Remote Test Probe, which may be incorporated for all measurements. The probe remotely acts as the test button. The Remote Test Probe also incorporates a target light to brighten dark testing areas.

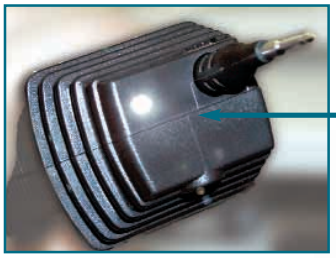
Test Leads
Catalog #2119.01
Standard with Models 1030/1040/1045

Field Kits
Catalog #2117.30/Catalog #2117.31
Available in Models 1040 and 1045

When placed in the hands-free carrying bag, the megohmmeter can either be carried on the shoulder to transport it or around the neck for use. This leaves the user's hands free to perform the measurements.

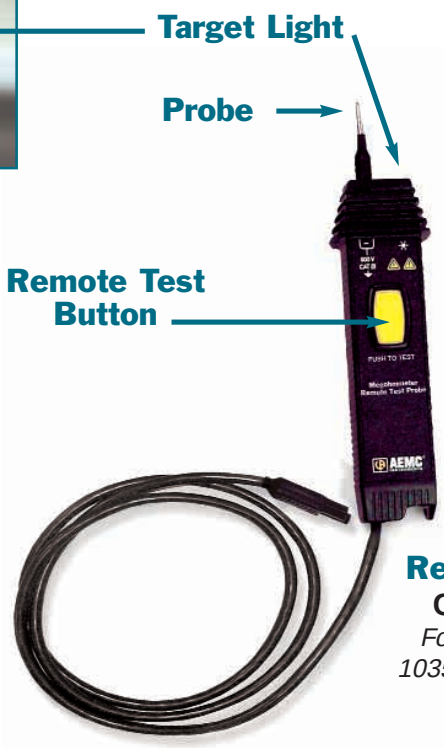
Soft Carrying Pouch
Included with standard megohmmeter models

At the bottom of the shoulder bag there is a pocket for the leads, the alligator clip and remote test probe.



The heavy-duty ABS field case is waterproof. It holds the megohmmeter and its accessories for durable field testing and travel.

AC Current Probe option on the Model 1039 allows measurement up to 240AAC.



Remote Test Probe
Catalog #2118.97
For use with the Models 1035, 1039, 1040 and 1045

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AC Current Probe Model MN211
Catalog #2115.73
For use with the Model 1039

Hands-Free Carrying Case
Catalog #2118.99
For use with all Models

Field Case
Catalog #2118.98
For use with all Models

Field Kit
Catalog #2115.42
Available in Model 1035

Test Leads
Catalog #2119.41
Standard with Model 1035

Field Kit
Catalog #2115.43
Available in Model 1039

Test Leads
Catalog #2117.02
Standard with Model 1039

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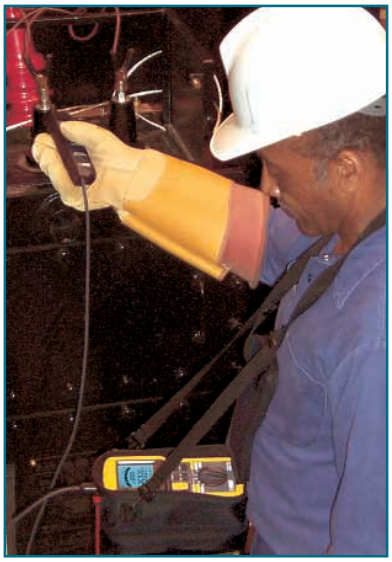
ORDERING INFORMATION

AEMC® Instruments' hand-held megohmmeters are ideal for any application. Whether you are testing large motors or small data cables, our line of digital/analog megohmmeters offers a model to fit your needs. A complete line of accessories is also available including remote test probe, hands-free carrying case and hard shell field case. All units include high quality test leads, probe and alligator clips necessary for performing any insulation test. Grip probes are included with the Models 1035 and 1039 for connecting to telecom and datacom panels.



Transformer testing using remote probe and hands-free carrying case

ORDERING INFORMATION	CATALOG NO.
Megohmmeter Model 1030, Digital with Analog Bargraph, 250V, 500V	**Cat. #2116.89**
Megohmmeter Model 1035, Digital with Analog Bargraph, Backlight, 50V, 100V, 250V, 500V	**Cat. #2116.90**
Megohmmeter Model 1039, Digital with Analog Bargraph, Backlight, Alarm, 50V, 100V	**Cat. #2116.91**
Megohmmeter Model 1040, Digital with Analog Bargraph, Backlight, Alarm, 500V, 1000V	**Cat. #2116.92**
Megohmmeter Model 1045, Digital with Analog Bargraph, Backlight, Alarm and Timer, 250V, 500V, 1000V	**Cat. #2116.93**
All models include a soft carrying pouch, two color-coded leads (three for Model 1035), black test probe, two alligator clips (three for Model 1035), batteries, two color-coded grip probes (for Models 1035 and 1039) and user manual	
Megohmmeter Field Kit 1035 Field Kit 1035 includes megohmmeter, field case, three color-coded leads, black test probe, three alligator clips, two grip probes, remote test probe, batteries and user manual	**Cat. #2115.42**
Megohmmeter Field Kit 1039 Field Kit 1039 includes megohmmeter, field case, two color-coded leads, black test probe, two alligator clips, two grip probes, remote test probe, AC current probe, batteries, and user manual	**Cat. #2115.43**
Megohmmeter Field Kit 1040 Field Kit 1040 includes megohmmeter, field case, two color-coded leads, black test probe, two alligator clips, remote test probe, batteries and user manual	**Cat. #2117.30**
Megohmmeter Field Kit 1045 Field Kit 1045 includes megohmmeter, field case, two color-coded leads, black test probe, two alligator clips, remote test probe, batteries and user manual	**Cat. #2117.31**
Accessories	
Remote Test Probe	Cat. #2118.97
Field Case (Waterproof)	Cat. #2118.98
Hands-Free Carrying Case	Cat. #2118.99
AC Current Probe Model MN211 (Lead - 1mA/A - 240A max)	Cat. #2115.73

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